

## ABSTRACT OF THE DISCLOSURE

A communication system has a number of nodes connected to a serial data bus.

Nodes communicate with each other by transmitting dominant and recessive bits during

5 bit intervals as taught by the CAN (controller area network) arbitration protocol.

According to the CAN arbitration protocol, any dominant bit transmitted during a bit interval causes the bit value received to be a dominant bit regardless of the number of recessive bits being sent. The system is arranged so that two or more nodes each respond to a report query message sent by one of the nodes, with a report message sent

10 simultaneously by each of the nodes. The headers (leading bits) of each of the report messages sent by nodes responding to a report query message are the same, allowing arbitration on a trailing node data field. This results in the message having the numerically largest (or smallest) node data field value to survive arbitration. Thus a number of nodes can be polled with a report query message and will respond by

15 simultaneously sending each node's numerical data value with the largest or smallest of these data values received by the system's nodes.